

## CLAIMS

1. An optical analysis system (20) for determining an amplitude of a principal component of an optical signal, the optical analysis system comprising:
  - a multivariate optical element (10) for reflecting the optical signal and thereby weighing the optical signal by a spectral weighing function, and
  - 5 - a detector (11) for detecting the weighed optical signal.
2. An optical analysis system (20) as claimed in claim 1, further comprising a dispersive element (6) for spectrally dispersing the optical signal, the multivariate optical element being arranged to receive the dispersed optical signal.
- 10 3. An optical analysis system (20) as claimed in claim 2, wherein the multivariate optical element (10) comprises a region for receiving a spectral portion of the dispersed optical signal, the region having a reflectivity relating to the spectral weighing function.
- 15 4. An optical analysis system (20) as claimed in claim 2, wherein the multivariate optical element (10) comprises a region for receiving a spectral portion of the dispersed optical signal, a part of the region being arranged to reflect the dispersed optical signal incident thereon to the detector, another part of the region being arranged to prevent the dispersed optical signal incident thereon from being reflected to the detector.
- 20 5. An optical analysis system (20) as claimed in claim 4, wherein the part of the region comprises a tiltable reflective surface.
6. An optical analysis system (20) as claimed in claim 3 or 4, wherein the region
- 25 comprises a reflective LC cell.
7. An optical analysis system (20) as claimed in claim 3 or 4, wherein the region comprises a reflective electro-wetting cell.

8. An optical analysis system (20) as claimed in claim 2, wherein the detector comprises a first detector (11P) for detecting the optical signal weighted by a first spectral weighing function and a second detector (11N) for detecting the optical signal weighted by a second spectral weighing function, the multivariate optical element (10) being arranged to reflect a first part of the dispersed optical signal weighted by the first spectral weighing function to the first detector (11P) and a second part of the optical signal weighted by the second spectral weighing function to the second detector (11N).

9. An optical analysis system (20) as claimed in claim 1 or 8, wherein the multivariate optical element (10) comprises a first multivariate optical element weighing the optical signal by a first partial weighing function and a second multivariate optical element for weighing the optical signal weighed by the first partial weighing function by a second partial weighing function.

10. An optical analysis system (20) as claimed in Claim 1, further comprising a light source (1) for providing light for illuminating a sample (2) comprising a substance having a concentration and thereby generating the principal component, the amplitude of the principal component relating to the concentration of the substance.

11. A blood analysis system (40) comprising an optical analysis system (20) as claimed in Claim 10, the sample comprising blood.

12. A method of determining an amplitude of a principal component of an optical signal, the method comprising the steps of:

- reflecting the optical signal by a multivariate optical element (10) having a spectral reflectivity corresponding to a spectral weighing function, and
- detecting the optical signal reflected by the multivariate optical element (10).